PATENT SPECIFICATION

756,199

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COMPLETE SPECIFICATION

Improvements in or relating to the Art of Packaging

We, MILPRINT INC., a corporation of the State of Delaware, United State of America of Milwaukee 1, Wisconsin, United States of America, do hereby declare this invention for which we pray that a Patent may be granted to us and the method by which it is to be performed to be particularly described in and by the following statements:—

The present invention relates generally to improvements in the art of packaging perishable commodities for protective purposes, and relates more particularly to improvements in the production, construction and use of pouch-like commodity containers or packages embodying tearing elements for facilitating opening thereof.

A primary object of this invention is to provide an improved and highly efficient flexible pouch-like commodity container or package of the type embodying tear tapes for facilitating opening of the package, and an improved practical and economical method of commercially producing such containers.

It has heretofore been proposed to provide commodity packages with tearing elements commonly referred to as tear tapes for facilitating opening of the package in order to obtain access to the commodity. The most common of these so-called tear tape packages embody a single relatively narrow tearing element in the form of a strip or band disposed adjacent to the inner surface of the container and extending transversely about the commodity so as to sever an end or cap portion of the container for access to the package. Another form of tear tape package utilizes a plurality of tearing elements disposed in spaced series on the inner container surface and likewise transversely encircling the commodity so as to permit removal of successive portions of the package for piecemeal removal of the commodity. In still another case, it has been proposed to provide a single tear tape extending along the inner surface of the container l ngitudinally of the package for longitudinally splitting a side wall to obtain acess to the commodity. However, all of these previously proposed tear tape packages have proved somewhat objectionable for one reason or another especially in the packaging of relatively perishable commodities such as cheese and meats. For instance, in the type of package wherein an end section or cap is removed by the tearing element, access to the packaged commodity is restricted to the end portion only of the package, and furthermore, once opened, the package cannot be effectively reclosed for even temporary protection of the commodity. While the provision of a spaced series of transverse tear strips permits more ready access to the remaining commodity as the packaged contents are dispersed, especially in the case of a transversely sliced commodity such as bread, such packages are highly impractical and costly to manufacture, and the objection with regard to reclosure is still not obviated thereby. As for the type of package embodying a single longitudinally extending tear tape as heretofore proposed, the application is extremely limited, since, once opened, the package likewise cannot be effectively reclosed, and access to the commodity is also undesirably restricted.

It is therefore a more specific object of the present invention to provide an improved easily opened pouch-like commodity container and package of the tear-tape type which may be readily produced in a novel manner and which obviates the objections and disadvantages heretofore attendant prior devices of this general type.

Another specific object of our present invention is to provide an improved pouch-like commodity container incorporating tear tapes extending longitudinally along opposite walls of the package and adapted to sever the opposite walls to any desired extent for ready access to and piece-meal removal of the commodity, the loos flaps f the container

resulting from such longitudinal severance being disposable over the end of the remaining commodity to reclose the package.

Another specific object of this invention is to provide an improved simple and rapid method of effectiv ly commercially fabricating or producing easy-opening tear-tape pouch-like containers and packages with simple and efficient equipment at minimum cost to the customer.

Still another specific object of the invention is to provide a new and improved double tear-tape commodity container which is extremely durable in construction, which may be readily produced in large quantities in accordance with an improved method, and in which both tapes may be readily grasped and simultaneously manipulated to quickly open the final package to any desired extent.

According to the invention, a blank for forming a pouch-like commodity container comprises a base sheet of flexible packaging material, a coating of thermo-plastic material adhered to a surface of said base sheet, and a pair of laterally spaced tear tapes disposed in substantially parallel relationship across the base sheet and adhered to the thermo-plastic coating, the base sheet being folded or foldable along a line extending between and approximately parallel to the tear tapes whereby the tear tapes are or may be disposed between cheeks of said base sheet in opposed relation and close proximity to each other.

In another aspect of the invention there is provided a pouch-like container formed from a blank constructed as aforesaid, by sealing together the cheeks along opposite ends inwardly of the sheet edges and across the tear tapes.

The invention further comprises a method of producing tear-tape blanks or pouch-like containers of the nature above set forth.

Specific objects and advantages of our invention will be apparent from the following detailed description.

A clear conception of the features constituting our present improvement, and of the steps of the improved production method, may be had by referring to the drawing accompanying and forming a part of this specification wherein like reference characters designate the same or similar parts in the several views. In the drawings:—

Fig. 1 is a more-or-less diagrammatic fragmentary and part-sectional perspective view of typical apparatus for performing the steps of coating the tear tapes and applying the same to an advancing coated web of packaging material;

Fig. 2 is an enlarged and somewhat exaggerated transverse section through one of the improved interiorly-coated container-forming sheets and the laterally spaced tear tapes embodied therein;

Fig. 3 is a plan view of one of the sheets folded and sealed at opposite ends to pouch-like formation and with a corner portion thereof turned back to more clearly reveal the construction thereof;

Fig. 4 is a perspective view of a cheese batch as finally enclosed and protectively housed in one of the improved pouch-like containers, the closure flaps at one end of the package being partially distended to more clearly reveal the structure; and

Fig. 5 is a fragmentary perspective view of the packaged cheese batch with one end of the container partially severed by the tear tapes and turned back upon itself prior to cutting and removing a portion of the commodity.

In accordance with our present improved method of producing the improved pouch-like containers a web of suitable relatively thin and flexible sheet material, having at least one surface thereof coated with thermo-plastic or heat-sealing material, is initially longitudinally advanced along a definite path. A pair of relatively narrow strips or ribbons of other flexible and sufficiently durable material to serve as tear tapes are then simultaneously coated with thermo-plastic or adhesive substance in heated and plastic condition as by passing the strips through a bath of molten wax or the like and removing the excess wax from the strips. The coated strips are then adhesively longitudinally applied to the thermo-plastic web surface in laterally spaced and parallel relation as the web is advanced, the heated and molten coating of the strips fusing with the web coating to provide an integral and unitary sheet. As the strips are thus applied to the web, the coated web is slit locally longitudinally of and on opposite sides of each tear strip in transverse alignment and at regularly spaced intervals, and the coated web and strips are transversely severed at such spaced intervals intersecting each series of local slits to provide successive sections each having gripping tabs for each of the tear strips at opposite ends thereof. Thereafter, the severed sections are each folded along a longitudinal line extending between and parallel with the strips so that the strips are disposed between folds or walls of the section in opposed relation and in close proximity to each other, with a slit of each tab forming set of slits in approximate alignment. Finally, the overlying portions or adjacent walls of each folded section are sealed as by application of heat and pressure along transvers lines somewhat inwardly of the opposite ends thereof and also inwardly of the tab forming slits and across the strips to thereby provide a pouch-like receptacle.

In the commercial exploitation of the production method thus described, it has been found convenient to utilize relatively simple apparatus such as diagrammatically

illustrated in the drawing; and since th initial web coating as well as the cutting, folding and sealing operations may be performed with standard and well known apparatus or manually, th apparatus shown for purposes of illustration has been confined accordingly. Referring to Fig. 1, the web 7 of relatively thin and flexible thermo-plastically coated sheet material 8 is supplied from a rotatably supported roll 9 from which it may be withdrawn, in a known manner over the periphery of a rotatably supported roll 10. Likewise, the strips or ribbons 11, 12 are supplied from a pair of laterally spaced rotatably supported rolls or spools 13, and 14 respectively; and as the strips 11, 12 are withdrawn from their respective spools, they are guided over and under guide rolls 15, 16 through a bath 17 of molten thermo-plastic material maintained in a tank 18. To remove the excess coating of thermo-plastic material from the strips 11, 12 and to correctly guide the same in properly spaced relation to the web 7, the strips 11, 12 as they leave the bath 17 are led through laterally spaced slots 19, 20 respectively in the guide member 21 to the coated surface 22 of the longitudinally advancing web 8 to which they are adhesively united or fused by the still relatively warm and molten thermo-plastic coatings 23, 24 respectively thereof as the web 7 and strips 11, 12 are simultaneously advanced. To form the sets of local longitudinal slits 25, 26 on opposite sides of the strips 11, 12 respectively in spaced series as shown, the roll 10 may be provided with sets of aligned peripheral knives 27, 28 respectively; and the web 7 and strips 11, 12 may thereafter be transversely severed along the dot-and-dash lines 29 in a well known manner to provide the successive sheet sections 30 from which the corner portions may be removed, if desired. Each section 30 may subsequently be folded in any convenient manner along a longitudinal fold line 31 extending between the laterally spaced tear tapes or strips 11, 12 as shown in Fig. 3, the fold line 31 being so selected as to locate the strips 11, 12 between the folds or walls 32, 33 respectively of the sheet and in close proximity but slightly offset with respect to each other so that one of the slits of the set 25 is directly aligned with one of the slits of the other set 26 to thereby provide adjacent gripping tabs for the strips; and with the section 30 thus folded, the opposite ends thereof may be sealed along the lines 34, 35 extending perpendicular to the fold line 31 and inwardly of the ends and of the slits 25, 26, the sealing being effected in a known manner by application of heat and pressure. The pouch-like receptacle thus formed may then be supplied with the commodity such as a batch of cheese 36 which may be protectively enclosed therein by sealing the top or mouth portion and folding th end flaps as shown in Fig. 4.

The container or receptacle thus formed comprises, in general, a base sheet 8 of flexible packaging material; a coating 22 of thermo-plastic or heat-sealable material adhered to and substantially covering a surface of the base sheet 8; and a pair of laterally spaced thermo-plastically coated tear tapes 11, 12 extending entirely across the base sheet in substantially parallel relation to two opposite edges of the sheet and adhered to the thermoplastic coating 22 thereof, the base sheet 8 being slit inwardly from its other opposite edges on both sides of the tear tapes as at 25, 26 to provide gripping tabs and being folded along an intermediate line 31 extending between and approximately parallel with the tear tapes 11, 12 whereby the tear tapes are finally disposed between the cheeks 32, 33 in parallel opposed relation and in close but slightly offset or staggered proximity to each other with one of the slits 25 being in substantial alignment with one of the slits 26 at each end of the folded sheet, the cheeks 32, 33 of the base sheet 8 also being heat sealed to each other at opposite ends along lines 34, 35 extending substantially perpendicular to the fold line 31 across the tapes 11, 12 and spaced inwardly of the sheet edges and of the slits 25, 26.

From the foregoing detailed description, it is believed apparent that the present invention contemplates the provision of an improved and novel pouch-like commodity container embodying tear tapes extending longitudinally along the opposite walls thereof for facilitating opening of the final package to any desired extent, as shown in Fig. 5, whereby to obtain access to the contained commodity for piece-meal consumption thereof and for subsequent reclosure of the open end by the loose flaps resulting from the initial tearing operation. To open the final sealed package for access to the commodity 36, it is only necessary to grip one of the adjacent end tabs formed by the respective sets of slits 25, 26 with the fingers of each hand and pull the ends of the respective tapes 11, 12 in opposite directions until the container is slit or torn thereby to the desired extent, after which the flaps of the torn portion may be folded back for access to the commodity and subsequently reclosed in an obvious manner. The improved method of fabricating the tear-tape containers is also extremely simple and highly efficient and may be economically and rapidly effected with the aid of relatively simple and inexpensive apparatus; and while the step of transversely severing the web into successive sections has been described as preceding the folding operation, these steps may be interchanged with the web being folded immediately after the formation of the local spaced slits, and then transversely severed along lines intersecting the slits. The base sheet 8 may be of any desired packaging

material such as regenerated cellulose or the lik coated with a protectiv moisture-resistant wax or other thermo-plastic material and the tear strips or tapes 11, 12 may likewise be formed of a relatively strong and durable sheet material coated with a like thermoplastic substance which will adhere to the coated surface 22 so as to provide a unitary sheet.

It should be understood that it is not desired or intended to limit this invention to the exact details of construction or to the precise steps of the method herein shown and described.

What we claim is:—

A blank for forming a pouch-like container, said blank comprising a base sheet of flexible packaging material, a coating of thermo-plastic material adhered to a surface of said base sheet, and a pair of laterally spaced tear tapes disposed in substantially parallel relationship across said base sheet and adhered to said thermo-plastic coating, said base sheet being folded or foldable along a line extending between and approximately parallel to said tear tapes whereby said tear tapes are or may be disposed between cheeks of said base sheet in opposed relation and in close proximity to each other.

A blank for forming a pouch-like container according to Claim 1, wherein the tear-tapes extend to an outer edge of the base sheet, said sheet being slit inwardly from said edge on both sides of each of said tear tapes to provide gripping tabs, and the sheet is folded at such a position that one of the edge slits of one cheek is in substantial alignment with one of the edge slits of the other cheek.

A blank for forming a pouch-like container, according to Claim 2, wherein the tear-tapes extend entirely across said base sheet to opposite outer edges thereof and said base sheet is slit inwardly from said opposite edges on both sides of each of said tear-tapes to provide gripping tabs, said tear tapes being disposed in opposed but staggered relation with one of the edge slits of one cheek in substantial alignment with one of the edge slits of the other cheek at each of such opposite edges.

A blank for forming a pouch-like container, according to any of the preceding claims, wherein thermo-plastic coating as on the base sheet extends over the tear-tapes.

A pouch-like container formed from a blank as claimed in any of the preceding claims, by sealing together the cheeks aforesaid along opposite ends inwardly of the sheet edges and across the tear-tapes.

A pouch-like container according to Claim 5 produced from a blank according to claims 3 and 4, wherein the cheeks of the base sheet are heat sealed to each other at opposite ends of said sheet along lines extending substantially perpendicular to the fold line and spaced inwardly of the sheet edges and slits.

A commodity package comprising a batch of edible commodity tightly nclosed within a pouch-like container constructed according to Claim 5 or 6, the tear-tapes being disposed on opposite sides of said commodity.

A method of producing a blank for use in forming a pouch-like container, which comprises, longitudinally advancing a thermo-plastically surfaced web of flexible sheet material, simultaneously coating a pair of relatively narrow strips of other material with adhesive substance, adhesively longitudinally applying the coated strips to the thermo-plastic web surface in laterally spaced relation as the web is advanced, subsequently transversely severing the coated web and strips into successive sections, and thereafter folding each section along a line extending between the strips whereby the strips are disposed between cheeks of the sheet in opposed relation and in close proximity to each other.

A method of producing a blank for use in forming a pouch-like container as claimed in claim 8 which includes slitting the advancing web locally on both sides of each strip at predetermined spaced points therealong, the severing of the web being subsequently carried out along lines intersecting the slits.

A method of producing pouch-like commodity containers which comprises, longitudinally advancing a thermoplastically surfaced web of flexible sheet material, simultaneously coating a pair of relatively narrow strips of other material with thermo-plastic material, adhesively longitudinally applying the coated strips to the th rmo-plastic web surface in laterally spaced and parallel relation as the web is advanced, slitting the web locally on opposite sides of each strip and parallel thereto at predetermined spaced points, thereafter folding the web along a longitudinal line extending between and parallel to the strips wh reby the strips are disposed between cheeks in opposed relation with a slit of one cheek in approximate alignment with a slit of the other cheek subsequently transversely severing the coated web and strips along lines inters cting the slits to form successive sections, and finally sealing the overlying cheeks of each folded section along transverse lines inwardly of the opposite ends and slits therein and across the strips.

The method of producing pouch-like commodity containers substantially as herein described.

A pouch-like container constructed substantially as herein described with reference to the accompanying drawings.

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756,199 COMPLETE SPECIFICATION
1 SHEET

This drawing is a reproduction of the Original on a reduced scale.

Fig.1.

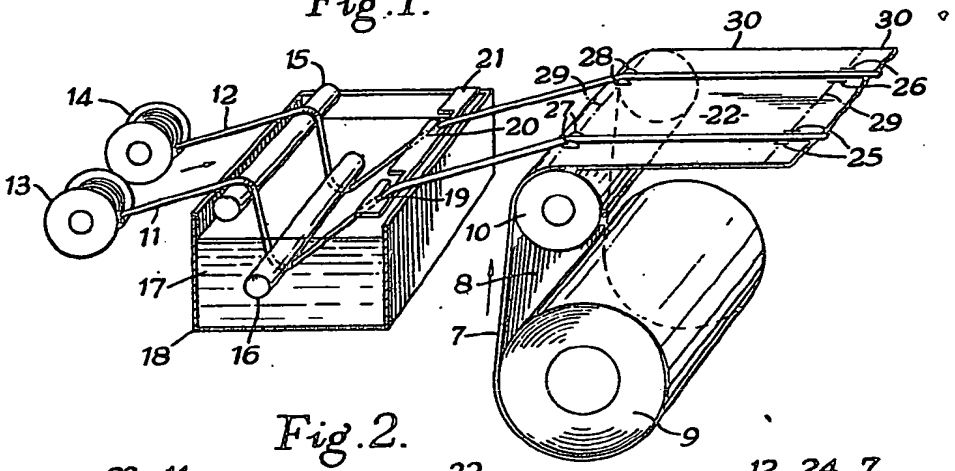
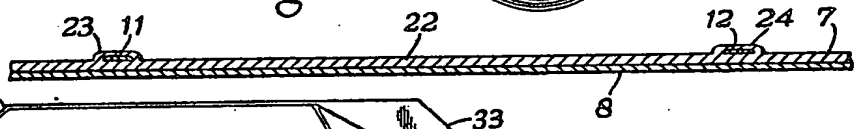


Fig.2.



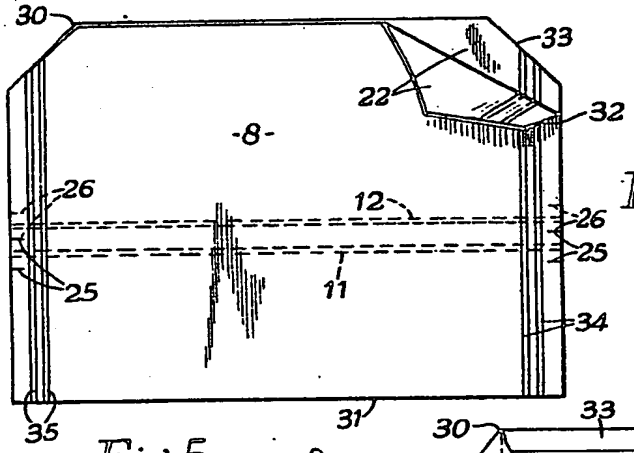


Fig.3.

Fig.4.

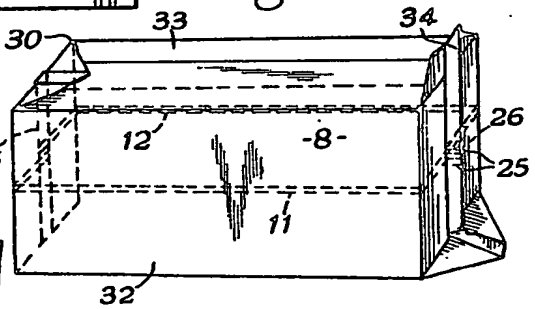


Fig.5.